

IN THE CLAIMS

1. (Currently Amended) A method for dynamically adjusting reserved bandwidth in a data communications device while transporting a session of data communication within the device, the method comprising the steps of:

receiving a first RSVP bandwidth reservation request associated with application data of a session of data communication, the first RSVP bandwidth reservation request distinct from the application data;

establishing a first bandwidth reservation associated with a the application data of the session of data communication in the data communications device based upon the first RSVP bandwidth reservation request;

transporting, through the data communication device, application data associated with the session of data communication utilizing data storage locations associated with the first bandwidth reservation;

receiving bandwidth allocation adjustment information, within a second RSVP bandwidth reservation request, associated with application data of the session of data communication and during the session of data communication, the second RSVP bandwidth reservation request distinct from the application data; and

dynamically adjusting the first bandwidth reservation to produce a second bandwidth reservation for the application data of the session of data communication in accordance with based upon the bandwidth allocation adjustment information within the second RSVP bandwidth reservation request while continually maintaining the session of data communication.

2. (Currently Amended) The method of claim 1 wherein the step of establishing a first bandwidth reservation includes the steps step of:

accepting a first bandwidth reservation request indicating a first amount of bandwidth to reserve for the session of data communication in the data communications device; and

labeling, with an identity of the session of data communication, a first percentage of available data storage locations used to store application data transported through the data communications device thus establishing the first bandwidth reservation, wherein the first percentage of storage locations labeled is based upon the first amount of bandwidth requested as indicated in the first RSVP bandwidth reservation request.

3. (Currently Amended) The method of claim 2 wherein, after the step of ~~accepting a~~ receiving the first RSVP bandwidth reservation request, the step of establishing a first bandwidth reservation further includes the step of:

calculating and storing a first percentage of total device bandwidth to allocate to the application data of the session of data communication based upon the first RSVP bandwidth reservation request; and

wherein the first percentage of data storage locations labeled in the step of labeling is based upon the calculated first percentage of total device bandwidth to allocate to the application data of the session of data communication.

4. (Original) The method of claim 3 wherein the step of calculating and storing, stores the calculated first percentage in a resource allocation table which is independently accessible by the step of labeling and the step of dynamically adjusting, so as to allow the step of dynamically adjusting to alter the calculated percentage in the resource allocation table without disrupting the step of labeling, thus allowing the bandwidth reservation in the device to be adjusted without effecting operation of the step of transporting.

5. (Currently Amended) The method of claim 2 wherein the step of dynamically adjusting the first bandwidth reservation to produce a second bandwidth reservation includes the ~~steps~~ step of:

~~accepting a second bandwidth reservation request indicating a second amount of bandwidth to reserve for the session of data communication;~~

labeling, with an identity of the session of data communication, a second percentage of available data storage locations used to store data transported through the

data communications device thus establishing the second bandwidth reservation, wherein the second percentage of storage locations labeled is based upon the second amount of bandwidth requested as indicated in the second RSVP bandwidth reservation request; and wherein the second percentage of storage locations labeled is different than the first percentage of storage locations labeled.

6. (Currently Amended) The method of claim 5 wherein, after the step of dynamically adjusting the first bandwidth reservation to produce a second bandwidth reservation further includes the step of:

calculating and storing a second percentage of total device bandwidth to allocate to the application data of the session of data communication based upon the second RSVP bandwidth reservation request; and

wherein the second percentage of data storage locations labeled in the step of labeling is based upon the calculated second percentage of total device bandwidth to allocate to the application data of the session of data communication.

7. (Original) The method of claim 6, wherein the step of calculating and storing, stores the calculated second percentage in a resource allocation table as a replacement for the calculated first percentage; and

wherein the resource allocation table is independently accessible by the step of labeling and the step of dynamically adjusting, so as to allow the step of dynamically adjusting to alter the calculated first percentage in the resource allocation table without disrupting the step of labeling, thus allowing the first bandwidth reservation in the device to be adjusted without effecting operation of the step of transporting.

8. (Currently Amended) The method of claim 2 6 wherein the step of calculating includes the steps of:

obtaining a current measurement of data communications device data storage locations available for data storage and a current bandwidth utilization rate; and

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computing an amount of bandwidth to reserve for the session of data communication based on the current bandwidth utilization rate and on the current measurement of data communication device data storage locations available for data storage.

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34. (New) The method of claim 2 wherein the step of labeling comprises labeling, with a label associated with the session of data communication, a first percentage of available queue entries of a queue used to store application data transported through the data communications device to establish the first bandwidth reservation, the first percentage of

available queue entries labeled based upon the first amount of bandwidth to reserve as indicated in the first RSVP bandwidth reservation request.

35. (New) The method of claim 5 wherein the step of labeling comprises labeling, with a label associated with the session of data communication, a second percentage of available queue entries of a queue used to store application data transported through the data communications device to establish the second bandwidth reservation, the second percentage of available queue entries labeled based upon the second amount of bandwidth to reserve as indicated in the second RSVP bandwidth reservation request wherein the second percentage of storage locations labeled is different than the first percentage of storage locations labeled.

36. (New) The method of claim 5 further comprising:

examining information associated with application data of the session of data communication; and

depositing application data of the session of data communication into the second percentage of available data storage locations, each of the second percentage of available data storage locations having an identity corresponding to the information associated with the application data.

37. (New) The method of claim 36 wherein the step of examining information comprises examining a data stream identification field within a header of the application data of the session of data communication.

38. (New) The method of claim 35 further comprising:

examining information associated with application data of the session of data communication; and

depositing application data of the session of data communication into a queue entry of the second percentage of available queue entries, each of the second percentage

of available queue entries having a label corresponding to the information associated with the application data.

39. (New) The method of claim 38 wherein the step of examining information comprises examining a data stream identification field within a header of the application data of the session of data communication.

40. (New) A data communications device comprising:

at least one communications interface;

a memory;

a processor; and

an interconnection mechanism coupling the at least one communications interface, the memory, and the processor;

wherein data communications device is configured to:

receive a first RSVP bandwidth reservation request associated with application data of a session of data communication, the first RSVP bandwidth reservation request distinct from the application data;

establish a first bandwidth reservation associated with the application data of the session of data communication in the data communications device based upon the first RSVP bandwidth reservation request;

transport, through the data communication device, application data associated with the session of data communication utilizing data storage locations associated with the first bandwidth reservation;

receive bandwidth allocation adjustment information, within a second RSVP bandwidth reservation request, associated with application data of the session of data communication and during the session of data communication, the second RSVP bandwidth reservation request distinct from the application data; and

dynamically adjust the first bandwidth reservation to produce a second bandwidth reservation for the application data of the session of data communication based upon the

bandwidth allocation adjustment information within the second RSVP bandwidth reservation request while continually maintaining the session of data communication.

41. (New) The data communications device of claim 40 wherein when establishing a first bandwidth reservation, the data communications device is configured to:

label, with an identity of the session of data communication, a first percentage of available data storage locations used to store application data transported through the data communications device thus establishing the first bandwidth reservation, wherein the first percentage of storage locations labeled is based upon the first amount of bandwidth requested as indicated in the first RSVP bandwidth reservation request.

42. (New) The data communications device of claim 41 wherein, after receiving the first RSVP bandwidth reservation request, when establishing a first bandwidth reservation, the data communications device is configured to:

calculate and store a first percentage of total device bandwidth to allocate to the application data of the session of data communication based upon the first RSVP bandwidth reservation request; and

wherein the first percentage of data storage locations labeled is based upon the calculated first percentage of total device bandwidth to allocate to the application data of the session of data communication.

43. (New) The data communications device of claim 40 wherein, when calculating and storing, the computerized device is configured to store the calculated first percentage in a resource allocation table which is independently accessible when labeling dynamically adjusting, so as to allow the data communications device to alter the calculated percentage in the resource allocation table without disrupting the device when labeling, thus allowing the bandwidth reservation in the device to be adjusted without effecting operation of the device when transporting.

44. (New) The data communications device of claim 41 wherein when dynamically adjusting the first bandwidth reservation to produce a second bandwidth reservation, the data communications device is configured to:

labeling, with an identity of the session of data communication, a second percentage of available data storage locations used to store data transported through the data communications device thus establishing the second bandwidth reservation, wherein the second percentage of storage locations labeled is based upon the second amount of bandwidth requested as indicated in the second RSVP bandwidth reservation request; and

wherein the second percentage of storage locations labeled is different than the first percentage of storage locations labeled.

45. (New) The data communications device of claim 44 wherein, after dynamically adjusting the first bandwidth reservation to produce a second bandwidth reservation, the data communications device is further configured to:

calculating and storing a second percentage of total device bandwidth to allocate to the application data of the session of data communication based upon the second RSVP bandwidth reservation request; and

wherein the second percentage of data storage locations labeled in the step of labeling is based upon the calculated second percentage of total device bandwidth to allocate to the application data of the session of data communication.

46. (New) The data communications device of claim 45, wherein when calculating and storing, the data communications device is configured to store the calculated second percentage in a resource allocation table as a replacement for the calculated first percentage; and

wherein the resource allocation table is independently accessible by the data communications device when labeling and dynamically adjusting, so as to allow the data communications device, when dynamically adjusting, to alter the calculated first percentage in the resource allocation table without disrupting the data communications

device when labeling, thus allowing the first bandwidth reservation in the device to be adjusted without effecting operation of the step of transporting.

47. (New) The data communications device of claim 46 wherein, when calculating the data communications device is configured to:

obtain a current measurement of data communications device data storage locations available for data storage and a current bandwidth utilization rate; and
compute an amount of bandwidth to reserve for the session of data communication based on the current bandwidth utilization rate and on the current measurement of data communication device data storage locations available for data storage.

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48. (New) The data communications device of claim 41 wherein, when labeling, the data communications device is configured to label, with a label associated with the session of data communication, a first percentage of available queue entries of a queue used to store application data transported through the data communications device to establish the first bandwidth reservation, the first percentage of available queue entries labeled based upon the first amount of bandwidth to reserve as indicated in the first RSVP bandwidth reservation request.

49. (New) The data communications device of claim 44 wherein, when labeling, the data communications device is configured to label, with a label associated with the session of data communication, a second percentage of available queue entries of a queue used to store application data transported through the data communications device to establish the second bandwidth reservation, the second percentage of available queue entries labeled based upon the second amount of bandwidth to reserve as indicated in the second RSVP bandwidth reservation request wherein the second percentage of storage locations labeled is different than the first percentage of storage locations labeled.

50. (New) The data communications device of claim 44 wherein the data communications device is configured to:

examine information associated with application data of the session of data communication; and

deposit application data of the session of data communication into the second percentage of available data storage locations, each of the second percentage of available data storage locations having an identity corresponding to the information associated with the application data.

51. (New) The data communications device of claim 50 wherein, when examining, the data communications device is configured to examine a data stream identification field within a header of the application data of the session of data communication.

52. (New) The data communications device of claim 44 wherein the data communications device is configured to:

examine information associated with application data of the session of data communication; and

deposit application data of the session of data communication into a queue entry of the second percentage of available queue entries, each of the second percentage of available queue entries having a label corresponding to the information associated with the application data.

53. (New) The method of claim 52 wherein when examining wherein, when examining, the data communications device is configured to examine a data stream identification field within a header of the application data of the session of data communication.

54. (New) A computer program product having a computer-readable medium including computer program logic encoded thereon that, when performed on a controller in a computerized device having a coupling to at least one communications interface provides a method for performing the operations of:

receiving a first RSVP bandwidth reservation request associated with application data of a session of data communication, the first RSVP bandwidth reservation request distinct from the application data;

establishing a first bandwidth reservation associated with the application data of the session of data communication in the data communications device based upon the first RSVP bandwidth reservation request;

transporting, through the data communication device, application data associated with the session of data communication utilizing data storage locations associated with the first bandwidth reservation;

receiving bandwidth allocation adjustment information, within a second RSVP bandwidth reservation request, associated with application data of the session of data communication and during the session of data communication, the second RSVP bandwidth reservation request distinct from the application data; and

CI dynamically adjusting the first bandwidth reservation to produce a second bandwidth reservation for the application data of the session of data communication based upon the bandwidth allocation adjustment information within the second RSVP bandwidth reservation request while continually maintaining the session of data communication.

55. (New) A content subscriber comprising:

at least one communications interface;

a controller; and

an interconnection mechanism coupling the at least one communications interface and the controller;

wherein the computerized device is configured to produce a means for accessing presence information, such means including

means for receiving a first RSVP bandwidth reservation request associated with application data of a session of data communication, the first RSVP bandwidth reservation request distinct from the application data;

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means for establishing a first bandwidth reservation associated with the application data of the session of data communication in the data communications device based upon the first RSVP bandwidth reservation request;

means for transporting, through the data communication device, application data associated with the session of data communication utilizing data storage locations associated with the first bandwidth reservation;

C1 means for receiving bandwidth allocation adjustment information, within a second RSVP bandwidth reservation request, associated with application data of the session of data communication and during the session of data communication, the second RSVP bandwidth reservation request distinct from the application data; and

means for dynamically adjusting the first bandwidth reservation to produce a second bandwidth reservation for the application data of the session of data communication based upon the bandwidth allocation adjustment information within the second RSVP bandwidth reservation request while continually maintaining the session of data communication.
